REMARKS

Introduction

Claims 1-62 are currently pending in the above-mentioned application and are submitted herewith.

Claim Rejections

Claims 20-22 and 26-28 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,679,327 to Darkwa et al. (hereinafter "Darkwa"). Claims 1-19, 23-25, and 29-62 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,562,110 to Ottenbrite et al. (hereinafter "Ottenbrite") in view of Darkwa.

Darkwa describes a HAIR STRAIGHTENING EMULSION. Darkwa describes a hair straightening emulsion product employing a combination of three (3) different types of dissolved, water-soluble strong chemical bases. (Col. 4, lines 62-64). One type is a nitrogenous organic base, a second type is an alkali metal hydroxide, and a third type is an alkaline earth metal hydroxide. (Col. 4, lines 64-67). Preferably, the cream emulsion product contains about 3.5 weight percent calcium hydroxide or less in combination with no more than about 1.6 weight percent alkali metal hydroxide, preferably lithium hydroxide (anhydrous basis) and has a pH of about 11.5. (Col. 9, lines 40-44). Preferably, the activator component contains less than about 20% by weight guanidine carbonate. (Col. 9, lines 62-64). For effective hair straightening with the hair straightening emulsion product of this invention, a cream emulsion component is employed that contains, prior to admixing with the activator component, from about 2 to less than 3 weight percent, preferably about 2.5 to about 2.75 weight percent calcium hydroxide, lithium hydroxide in an amount of from about 1 weight percent to less than about 2 weight percent, more preferably from about 1.25 weight percent to about 1.8 weight percent. (Col. 14, lines 46-54). A preferred embodiment of an activator component comprises, prior to admixture with a cream emulsion component, about 10 to about 20 weight percent, more preferably about 11 to about 17 weight percent guanidine carbonate. (Col. 14, lines 64-67).

Ottenbrite describes a HAIR STRAIGHTENING AND PERMANENT WAVING COMPOSITION. The hair straightening composition disclosed in Ottenbrite includes about 10 to about 25 weight percent sodium bisulfate, 10 to 25 weight percent urea, and 0.1 to 10 weight percent morpholine. The composition is placed on the hair which is then heated at between 35° and 55°C for about 10 to 30 minutes. The sodium bisulfate-urea-morpholine

combination is then rinsed from the hair.

Regarding claim 20, which has been rejected under 35 U.S.C. § 102(b) as being anticipated by Darkwa, Darkwa does not include a composition for use in straightening hair including only "calcium hydroxide having a concentration of about 1.21% by weight to about 3.45% by weight" and "guanidine carbonate having a concentration of about 5.68% by weight to about 17.06% by weight" as stated in claim 20. The Examiner failed to point out that the hair relaxer described in Darkwa specifically includes an alkaline earth metal hydroxide (calcium hydroxide), an activator component (guanidine carbonate), and an alkali metal hydroxide (lithium hydroxide). The hair straightener of Darkwa requires these three (3) components while claim 20 includes only calcium hydroxide and guanidine carbonate. Darkwa specifically comments on the problems associated with calcium hydroxide/guanidine carbonate hair relaxers.

> "For example, to achieve permanent hair straightening particularly of coarse to resistant hair, within the indicated maximum treatment time, [30 minutes], the amount of calcium hydroxide in the cream emulsion component should preferably be relatively high, (i.e., between about 4 and 10 weight percent as indicated above), and the activator component should preferably be a substantially saturated solution, (i.e., about 28 weight percent as indicated above), of guanidine carbonate...However, these respective amounts of the precursor chemicals can present formulation and kit product shelf stability problems. Also, maximizing the amount of strong organic free base that is present in a hair straightening emulsion product made from the kit components may add to the chance of causing skin (including scalp) irritation during treatment (contact) time period." (Darkwa, col. 4, lines 1-18).

Darkwa also goes on to state that "merely reducing in a hair straightening emulsion the concentration and high alkalinity level of either its alkaline metal hydroxide or its strong organic base only results in an emulsion which is incapable of achieving substantially complete permanent hair straightening in the required maximum treatment time." (Col. 4, lines 19-24). Darkwa adds lithium hydroxide to the calcium hydroxide component of the hair relaxer to raise the pH and overall alkalinity of the formula in order to make the hair straightener more effective. Darkwa also specifically states that a hair straightener including amounts of calcium hydroxide and guanidine carbonate similar to those required by claim 20 would be ineffective or incapable of achieving substantially complete permanent hair straightening without the addition of lithium hydroxide. (Col. 4, lines 19-24). Therefore, Applicant believes claims 20 and 26, which include identical limitations regarding the

amount of calcium hydroxide and guanidine carbonate in the hair straightening composition are not anticipated by Darkwa because Darkwa specifically requires the addition of lithium hydroxide to the calcium hydroxide/guanidine carbonate hair relaxer. As Darkwa states, the behavior of the hair relaxer that includes lithium hydroxide with calcium hydroxide and guanidine carbonate is substantially different than the results that can be expected from a hair relaxer containing only guanidine carbonate and calcium hydroxide. (Col. 5, lines 45-64). Removal of the rejections to properly allowable claims 20 and 26 is respectfully requested. Claims 21 and 22 depend directly from claim 20 and claims 27 and 28 depend directly from claim 26 and each contains independently patentable subject matter. Removal of the rejections to claims 21, 22, 27, and 28 is also respectfully requested.

Regarding the 35 U.S.C. § 103(a) rejection to claims 1-19, 23-35 and 29-36 using a combination of Ottenbrite and Darkwa, the Applicant respectfully disagrees with the Examiner's position for several reasons. As discussed above, Darkwa specifically teaches away from using only a combination of guanidine carbonate and calcium hydroxide and requires the addition of lithium hydroxide to the guanidine carbonate/calcium hydroxide hair relaxer described in Darkwa. Second, Ottenbrite teaches away from using hydroxide-type hair relaxers such as those described in Darkwa as is stated in the following paragraph:

> "Most commercially available formulations for straightening or waving 'Afro-American' or 'Black' hair utilize harsh hydroxide chemicals (sodium, potassium, calcium and lithium hydroxides). The highly alkaline conditions (pH 12-14) of these products cause hair swelling and disruption of disulfide bonds followed by the formation of carbon-sulfur bonds. The high pH of the products causes the partial dissolution of the intercellular matrix in the hair cuticle, rendering the hair brittle and fragile. Under the conditions of pH 12-14, some hydrolysis of the polypeptide chains in the hair protein can also occur. Prolonged exposure of hair to a strong alkali weakens and can eventually dissolve the hair." (Ottenbrite, col. 1, lines 13-25).

Ottenbrite criticizes and therefore teaches away from using hydroxide-type hair relaxers. Therefore, the Examiner cannot reasonably combine the hydroxide-type hair relaxer described in Darkwa with the heating mechanism described in Ottenbrite. Also, the Examiner stated that it would be obvious to one having ordinary skill in the art to "employ the compositions as described above as taught by Darkwa et al. into the method of straightening hair of Ottenbrite et al. for the purpose of straightening the hair." The Examiner is completely overlooking the fact that the chemicals used in the Darkwa hair straightener are a completely different type than the chemicals used in Ottenbrite. For

example, the pH of the hair straightening composition of Darkwa has a range from about 11.5 to about 14, while the hair straightening composition of Ottenbrite has a pH of between 5 and 8 or neutral to mildly acidic. It would not have been obvious to one of ordinary skill in the art to take one step (applying heat) used in a chemical reaction and apply that step to a completely different chemical reaction and expect the chemical reaction to behave in the exact same manner. Also, the reaction mechanism with which the guanidine hydroxide formed from a guanidine carbonate/calcium hydroxide relaxer breaks down the disulfide bond of hair is completely different than the reaction mechanism by which the sodium bisulfate, morpholine, and urea hair relaxer breaks the disulfide bond of hair. For at least these reasons, it is improper to reject claims 1-19, 23-25 and 29-62 under 35 U.S.C. § 103(a) over a combination of Ottenbrite and Darkwa. Therefore, removal of the rejections to claims 1-19, 23-25 and 29-62 is respectfully requested.

Final Remarks

The Third Supplemental Information Disclosure Statement has not been acknowledged by the Examiner. Applicant respectfully requests that the Examiner acknowledge the Third Supplemental Information Disclosure Statement.

Applicant respectfully submits that claims 1-62 are in condition for allowance. Such allowance is respectfully requested.

If necessary, Applicant requests that this Amendment be considered a request for an extension of time for a time appropriate for the response to be timely filed. Applicant requests that any required fees for filing this Amendment be charged to the account of Bose McKinney & Evans LLP, Deposit Account Number 02-3223.

Respectfully submitted,

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